

DOCUMENT RESUME

ED 375 614

FL 022 411

AUTHOR Hsu, Yuehkuai
TITLE Whole Language, Reading Achievement, and the ESL Student: Definitions and Applications.
PUB DATE Apr 94
NOTE 43p.; Paper presented at the Annual Meeting of SECOL and the Tennessee Teachers of English to Speakers of Other Languages (Memphis, TN, April 7-9, 1994).
PUB TYPE Information Analyses (070) -- Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Classroom Techniques; Definitions; Educational Research; Educational Strategies; *English (Second Language); Language Research; *Reading Instruction; *Reading Skills; Second Language Instruction; Second Language Learning; *Whole Language Approach

ABSTRACT

A review of the literature focuses on the use of the whole language approach to second language teaching in reading instruction for students of English as a Second Language (ESL). First, research on the whole language approach is explored, particularly as it has been used to teach reading. The approach itself is explained, and growth in its use is documented. The variety of classroom techniques and materials that can be used are also examined, and criticisms of the approach are noted. While substantial research on the whole language approach in reading instruction is found, comparatively little on its use in ESL reading is evident. However, it is proposed, based on literature concerning ESL instruction, that the principles of the whole language approach address many of the complexity of issues in ESL learning and is appropriate for ESL reading instruction. (MSE)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

FL

ED 375 614

Whole Language, Reading Achievement, and the ESL Student:
Definitions and Applications

Paper Presented
at the 1994 Annual Conference
of SECOL and TNTESOL
April 7-9, 1994
Memphis, TN

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Yuehkuei
Hsu

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Yuehkuei Hsu

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.

☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

University of Memphis

BEST COPY AVAILABLE

FL022411

Whole Language, Reading Achievement, and the ESL Student:
Definitions and Applications

In the past decade, increased research has been conducted to investigate the effect of different approaches on children's reading achievement (Eddowes, 1990; Eldredge, 1991; Freeman & Freeman, 1987; Holland & Hall, 1989; Kasten & Clarke, 1989; Klesius, Griffith, & Zielonka, 1991; Manning & Manning, 1991; Milligan & Berg, 1992; Reutzel & Cooter, 1990; Ribowsky, 1985; Schafer, 1989; Stahl and Miller, 1989; Stice & Bertrand, 1991). However, all of this research has focused on children who speak English as their first language (Non-ESL children).

Recently, researchers and theorists (Freeman and Freeman, 1992; Goodman K., 1986; Goodman Y., 1980; Hudelson, 1984, 1989a, 1989b; Krashen, 1985a, 1985b, 1991; Moll, 1989; Moore, 1990; Rigg, 1991; Rupp, 1986) have clearly demonstrated some of the issues involved in enhancing language growth of children who speak English as their second language (ESL children) under the whole language approach. However, the issue of the effect of different approaches on the reading achievement of ESL children is rarely addressed. In a search of the literature, no study was found which examined the effect of different approaches to teaching reading on the reading achievement of both ESL and Non-ESL children.

Whole Language

According to Yetta Goodman (1989) and Gursky (1991), the historical roots that have contributed to the development of whole language can be traced through educational movements such as John Amos Comenius's concern for learner-centered pedagogy; John Dewey's progressive education which has contributed to the idea of learning by doing and the integration of the language arts activities within the curriculum; Piaget's support for children being active agents and developing their own conceptualizations in the learning process; Vygotsky's belief that learning is a social activity; and Dorris Lee and Lillian Lamoreaux's language experience approach which encourages teachers to use children-made texts as reading and writing materials. Bergeron (1990) also points out that "the theoretical roots of whole language can be more precisely traced through the natural and language experience movements, movements in which many of the common tenets of the whole-language concept can be found" (p. 304).

Stahl and Miller (1989) illustrate the commonalities between the whole language and the language experience approach (LEA). These commonalities include the use of children's own languages, children made books and journals, the use of meaningful language, and the avoidance of using structured basal reading materials and instruction. However, they only focus on the common tenets existing between the whole language and the language experience approach; the distinctions between the two are not addressed. From

their research, Klesius, Griffith, and Zielonka (1991) proclaim that there are two major differences between the two. The first is the reading material used for instruction. Whole language tends to use literature and tradebooks as the primary sources for reading while the language experience approach uses children's own writing and language as reading and writing materials. Second, whole language children have first hand experiences with the alphabetic principle through their writing, whereas in the language experience approach, children dictate and teachers write for them (p. 49).

As indicated by Thompson (1992), Goodman's (1967) "Psycholinguistic guessing game" is the theory behind the whole language philosophy and influences the teacher's instructional reading strategies. Based on the concept of "psycholinguistic guessing game," Goodman (1967) conjectures that readers use semantic, syntactic, and graphophonic clues to gain meaning from print. Also, this learning strategy emphasizes that learning by doing is effective and the authentic literacy activities that children engage in is purposeful and functional. Children learn best by being immersed in a print- and literacy rich environment where they can see purpose for using their reading and writing skills (Thompson, 1992, p. 136). Tierney, Readence, and Dishner (1990) also consider functional and meaningful use of language as important in teaching reading. They believe that the major principle of whole language is that "language is learned best when the learner's focus is on use and meaning" (p. 27).

The whole language approach has been described as a "top-down" theory of reading which emphasizes the importance of teaching language as a whole entity as contrasted with a skills-oriented approach which is associated with the "bottom-up" model of reading (Ekwall and Shanker, 1989, p. 7). The whole language advocates, proclaimed by Ekwall and Shanker, believe that the whole has greater importance than the sum of its parts and that subskills should rarely be taught. In contrast, a skills-oriented approach is based on the belief that students become readers through a series of combined subskills.

The whole language movement has swept through the language arts communities over the past decade. According to Heald-Taylor (1989), this paradigm shift from eclectic language arts in favor of a holistic view was supported by five areas of research: developmental learning, oral language development, reading, writing, and evaluation. As indicated by Taylor (1989), research in these areas demonstrates that pre-school children acquire language naturally and developmentally. Children are greatly benefited when they are engaged in meaningful literate activities utilizing comprehension-focused strategies rather than through formal instruction (Chomsky, 1969; Sulzby & Teale, 1985; Slobin, 1985; Holdaway, 1979).

Rather than an effort to increase accountability and raise standards, whole language starts with the premise that the current educational system does not work because it is not built on an educationally and theoretically sound basis of how children learn

and develop ("Whole Language," 1991). The whole language proposition is that children construct their own knowledge in relation to their previous experience, that children are "intrinsically motivated to learn and to make sense of the world" (Rich, 1985, p. 720), that the teaching and learning of reading and writing are interrelated, that children are encouraged to experiment with language through authentic reading and writing activities, and that children are given plenty of opportunities to interact with real texts (i.e., children-made books, charts, journals, newspapers, etc.) (Clark, 1987).

Unlike skills-based instruction, there is no formula for whole language (Rich, 1985). Basal series emphasize the use of workbooks, repetitive practices, focused skills, and the teaching of isolated language drills. However, in whole language classrooms, children are engrossed and enthralled in authentic reading and writing activities and have plenty of opportunity to interact and cooperate. Big books and shared reading experiences are provided for each child everyday (Holdaway, 1979). The four language modes, speaking, reading, writing, and listening, are mutually supportive and are not artificially separated. In the whole language classrooms, published materials, be it newsletters or books, are used to meet the needs of children rather than children being put through the material to accomplish someone's goals. The whole language classrooms are comprehension and child-centered. No two whole language teachers appear to use identical methods to run their programs; however, they all have the same belief that learning

is joyous. Given these practices, whole language is impacting current reading education and causing some teachers to seriously consider or change their instructional programs (Thompson, 1992).

Although whole language has an appeal to many teachers, educators, and researchers, and has been a popular topic in journals, workshops, and conferences, in professional journals the definition of whole language remains ambiguous and inconclusive.

What Is Whole Language

Harste and Burke (1977) first suggested the term when they described three different theories of reading: phonics, which defines reading as a process of turning letters into sounds; skills, which defines reading as a hierarchy of skills, including phonics, word recognition, and comprehension skills; and whole language, which defines reading as a psycholinguistic process in which readers interact with texts.

According to Gentry (1987), "whole language promotes language development by emphasizing the natural purpose of language: communicating meaning" (p. 42). Hajek (1984) agrees with Gentry (1988) that whole language, rather than focusing on mechanical correctness, emphasizes communication in the learning situation. Hajek (1984) also points out that there are four specific instructional techniques used by whole language teachers: having the children see themselves as authors, using predictable books and other materials, encouraging invented spelling, and using and displaying student work (Hajek, 1984, p. 39). Goodman, Smith, Meredith, and Goodman (cited in Manning et al., 1991, p. 3) define

whole language as "curricula that keep language whole and in the context of its thoughtful use in real situations." Altwerger, Edelsky, and Flores (1987) describe whole language as "a set of beliefs" about language development, language learning, and language instruction (p. 145). They indicate that whole language classrooms contain reading and writing journals, making books, reading aloud to children, silent reading, and literature.

Ferguson (1988) defines whole language as active participation in learning. He believes that the whole language approach is one in which a student's learning is based on familiar experiences and claims that this approach is appropriate to children of diverse backgrounds. Ferguson also agrees that the central notion of this approach places the responsibility for teaching on teachers and for learning on students (cited in Schafer, 1989, p. 22).

Goodman and Goodman (1981) believe that written language should be presented to children as a whole meaningful communication system and describe whole language as follows:

In this method (WL), . . . learning is expected to progress from whole to part, from general to specific, from familiar to unfamiliar, from vague to precise, from gross to fine, from highly contextualized to more abstract. . . . From this perspective reading is intrinsic when language is real. Children are ready when they see need and have confidence in themselves. By carefully building on what children already know, we assure their readiness (p. 5).

Rupp (1986) makes a similar point when he explains whole language as an approach based on recent psycholinguistic research on the reading process which views learning to read as a

developmental process moving from the whole to the parts. He describes whole language as a pedagogical theory which consists of ten components: 1) makes use of whole, meaningful reading materials, 2) focuses on comprehension and communication, 3) utilizes and depends upon quality children's literature, 4) helps children learn to integrate and balance all cuing systems (graphophonic, syntactic, semantic, background and experience), 5) treats literacy learning as a language development, 6) encourages risk taking, hypothesis testing, self monitoring, 7) treats literacy as a means to an end, 8) approaches literacy as a movement from whole to parts, 9) encourages children to utilize their backgrounds, 10) promotes reading and writing as enjoyable, useful and purposeful activities.

Rich (1985) defines whole language as "an attitude of mind which provides a shape for the classroom" (p. 719). For Rich the whole language teacher is more than a technician. The true whole language teacher demonstrates that the answers to the theory-to-practice question reside within the self, not in a text. It should be the people in the classrooms who are in control of classrooms rather than the people elsewhere who develop programs.

In order to compile a more concise definition for the term whole language, Bergeron (1990) analyzed sixty-four articles related to whole language instruction. Her findings showed that differences of descriptions of whole language exist between school- and university-based authors' perceptions. Unable to form a

specific term for whole language, she constructed her own definition:

Whole language is a concept that embodies both a philosophy of language development as well as the instructional approaches embedded within, and supportive of, that philosophy. This concept includes the use of real literature and writing in the context of meaningful, functional, and cooperative experiences in order to develop in students motivation and interest in the process of learning (p. 319).

Thompson (1992) points out that ambiguity is the first problem with whole language. He believes that whole language is a philosophy, rather than a method, and states that it is the popular term "for teaching reading using a meaning methodology" (p. 142).

Gursky (1991) states that whole language is an entire philosophy about teaching, learning, and the role of language in the classroom. It is about empowerment and the role of teachers, students, and texts in education. A whole language classroom is child-centered; learning is considered a social activity. Language is kept whole. Process, instead of the final product, is stressed and valued.

Whitmore and Goodman (1992) describe whole language as a movement which challenges both teachers and administrators to reinvestigate their early childhood programs and beliefs about children and learning that are demonstrated through their curriculum. Language, active learning, play, and home-school relationships, as indicated by Whitmore and Goodman, are the four premises of a whole language philosophy that are central to early childhood education.

Edelsky, Altwerger, & Flores (1991) offer probably the most current description of what whole language is and what it is not:

. . . whole language is a professional theory, an explicit theory in practice. . . whole language weaves together a theoretical view of language, language learning, and learning into a particular stance on education (p. 7).

Edelsky et. al also point out that whole language is neither a method nor a collection of strategies, techniques, or materials.

Instead of defining whole language, Pryor (1990) identifies four misconceptions involved with whole language ideology: 1) "whole language" and "literature-based" are synonymous terms; 2) phonics is not taught in a whole language classroom; 3) switching from the use of basals to whole language can occur within one year or shorter; and 4) whole language is for everyone. She refutes these misconceptions by saying that: 1) whole language provides the philosophical building blocks for literacy instruction, yet literature serves as the tool; 2) phonics may be taught in a meaningful context within the whole language classroom; 3) making the transition to a holistic philosophical stance involves many changes and therefore takes longer than just a school year; and 4) as with any philosophy or set of beliefs, whole language may not be for everyone.

In summary, the review of the professional literature on the definition of whole language parallels Rich's (1985) view that there is no formula for whole language. Whole language has been described as a philosophy (Newman, 1985; Clarke, 1987; Goodman, K., 1989; Thompson, 1992), a theory (Reutzel & Hollingsworth, 1988), a method (Hajek, 1984), an approach (Ferguson, 1988;

Mosenthal, 1989), an attitude (Rich, 1985; Nelms, 1988), and a perspective on education (Watson, 1989). It seems that no two people agree on the same definition. Even a single author defines whole language alternatively within his/her writing. Hajek (1984) interpretes whole language as a concept, a method, and an approach in the same article. To explain such a diversity in terminology of whole language, Watson (1989) offers three reasons. First, advocates of whole language refuse the use of a dictionary type definition; second, determined attitudes exist with both advocates and opponents of whole language making communication between these two groups difficult; third, the real experts in whole language, the classroom teachers, have not yet contributed their opinions of how whole language should be defined.

Criticisms of Whole Language

Even though whole language is receiving great support, its effectiveness has been critically questioned by Stahl and Miller (1989), and Thompson (1992). Stahl and Miller (1989), in a comprehensive review of experimental studies on the effectiveness of whole language/language experience approaches, reported that whole language and language experience instruction are less effective with disadvantaged children than direct instruction in teaching reading. This finding is reinforced by Thompson (1992).

In a study relating the whole language instructional philosophy to reading methodology, Thompson (1992) strongly disagrees with Goodman's guessing game theory and criticizes whole language as being loosely structured and, in the long run, hazardous to students'

reading competencies. Not including the teaching of the alphabetical principle or phonics in a systematic way, Thompson believes, is a serious weakness in the whole language philosophy. He claims that skills and learning are most efficiently achieved by teacher-led, direct instruction, not through whole language. Thompson further emphasizes that

. . . the feasibility of direct instruction for teaching skills has been empirically demonstrated. Peterson (1979) reviewed 117 studies, and found that traditional, direct methods of instruction tend to produce the best results in improving scores in reading and mathematics (pp. 138-139).

Recently, the difficulty of implementing whole language instruction by elementary school teachers was investigated by Walmsley and Adams (1993). After conducting a series of confidential interviews with 71 practicing whole language teachers, Walmsley and Adams concluded that whole language will continue, but it will not dominate American public schools due to the following findings: 1) whole language instruction is demanding and overwhelming; 2) whole language alienates and divides; 3) whole language instruction is hard to manage; 4) administrators interpret whole language differently and send mixed messages; 5) whole language instruction and traditional assessment are not philosophically congruent; and 6) whole language is difficult to define. Walmsley and Adams's finding that whole language is hard to define parallels the debate in the professional literature in which whole language is ambiguously defined. These results imply that

whole language is not for everyone and is inappropriate for teachers not holding its basic philosophical stance.

Several other issues relating the implementation of whole language are indicated by Clarke (1987): 1) parents have voiced anxiety concerning whether their children are getting enough of the basics and 2) whole language teachers are feeling the pressures of high expectations. Likewise, Goodman (1988) pointed out the intense pressure whole language teachers have while preparing and running a whole language classroom. They are often resented and isolated by traditional teachers, questioned by parents, colleagues, and administrators, and worried about whether students will do well on traditional standardized tests or how successful they will be in the next grade. To help alleviate these concerns and improve the effectiveness of implementing whole language in elementary school, Clarke (1987) indicates that the primary factor to success is returning control and responsibility of the classroom to the teachers while providing them with an inherently motivating situation. She further claims that the recognition for the need of flexibility throughout the whole system is also essential.

Whole Language And Reading Achievement

Whole language proponents proclaim that whole language instruction is superior to skills-based programs in the teaching of literacy due to its scientifically and theoretically sound basis of how children learn and develop; however, it is difficult to judge their

claim because there is little available supporting research. Mckenna, Robinson, and Miller (1990) indicate two possible reasons for the paucity of supporting experimental research concerning the relative effectiveness of whole language. The first reason is that whole language is not well defined (Stahl & Miller, 1989; Walmsley & Adams, 1993). Watson (1989) responded that this is due to the fact that most whole-language proponents reject a dictionary-type definition. The second reason, according to Mckenna et al., relates to the traditional methods and instrumentation used to assess the effectiveness of whole language. The second reason indicated by Mckenna et al. is supported by Reutzel and Cooter (1990). Reutzel and Cooter state that whole language advocates' substantial resistance toward traditional research design has caused a lack of quantitative comparable information regarding the effectiveness of whole language.

Standardized measures, which have been used as tools for the comparisons of established whole language and traditional instruction, are being criticized by Goodman (1986) and Weaver (1989) for their inability to require students to demonstrate the full range of their knowledge and thus do not sufficiently reflect current conceptualizations of the reading process. Further, standardized tests are difficult to measure young children's complex literacy behaviors due to unique individual reading style (Eddowes, 1990, p. 222). If whole language advocates seek to gain widespread acceptance of their view, Mckenna et al. (1990) suggest that test

reforms and improvements in, or alternatives to standardized testing, are vitally important.

Regardless of the above reasons for the lack of comparative studies, there have been studies comparing whole language to more traditional programs in the teaching of reading. Since one purpose of this review is to identify some of the comparative research regarding whole language instruction at the level of kindergarten up to the second grade, the review will be limited to these grade levels.

According to Shaw (1991), the first experimental study comparing the traditional and whole language approach was reported by Ribowsky (1985). Ribowsky studied 59 girls in two kindergarten classes in a girls' parochial school to see whether the children in the whole language classroom, in which they were involved in shared reading and language exploration, performed better in reading ability than children in the code emphasis room, in which Lippincott's Beginning to Read, Write, and Listen Program was used. The results, using a quasi-experimental design, revealed a significant main effect for treatment favoring the whole language group. Ribowsky (1985) concluded that 1) the whole language approach to preschool literacy is highly effective, 2) the home bedtime story was applicable within the school setting, 3) children receiving whole language instruction performed significantly better on formal measures of phonetic knowledge.

Kasten and Clarke (1989) developed a year-long, quasi-experimental study to investigate the emerging literacy of two preschools and two kindergartens which were involved in whole

language strategies such as daily shared reading experiences and weekly opportunities to write freely. Findings indicated that both preschool and kindergarten experimental groups made greater achievement gains on meaningful aspects of reading, exhibited more enthusiasm and developed more positive attitudes toward reading than the comparison groups.

Gunderson and Shapiro (1987) investigated two first grade classrooms utilizing whole language instruction and compared vocabulary generated by students writing their own material with basal. A total of 52 students were involved in this descriptive study. As indicated by the researchers, critics of whole language approaches consider that students do not acquire essential phonics skills since a developmental phonics program is not a feature of a whole language reading program. However, contrary to critics' warnings, findings of this study suggest that students gain a great number of phonics skills and master the high frequency vocabulary which is presented in basal readers.

Manning and her colleagues (1991) compared the effects of whole language instruction to a skills-oriented program on the reading achievement of 22 minority children from the time they entered kindergarten to the end of second grade. The study concluded that children in the whole language group performed better in all areas compared than did children in the skills-based group.

In a two-year pilot study, Stice and Bertrand (1990) examined the effects of whole language and traditional classrooms on 100 at-

risk first and second graders' overall literacy performance. The informal, qualitative measures indicated that children from the whole language group 1) read for meaning better, 2) appeared more confident in reading, and 3) appeared to gain more reading strategies. This study concluded that whole language appears to be a viable alternative to traditional instruction for young children at-risk.

Freeman and Freeman (1987) analyzed four approaches to reading acquisition in four first grades of a middle-class suburban elementary school. Nine randomly selected subjects from different approaches participated in the study. Informal reading inventories were individually administered and scored for levels of word recognition and reading comprehension. From the observed data, the researchers found that: 1) children who are exposed to many different reading books have higher independent reading levels; 2) children who have wide exposure to the language experience approach tend to cope with instruction at or above grade level better; 3) children who are taught to read for understanding score higher on reading comprehension. The results of the study support a whole language approach as a viable alternative to teaching reading and writing.

Unlike the previous studies, results from the following comparative studies show no significant difference in students' reading achievement between whole language and skills-based instruction (Eddowes, 1990; Holland & Hall, 1989; Schafer, 1989; Klesious, Griffith & Zielonka, 1991).

To compare the effects of a skills-based and a holistic approach to teach beginning reading, Eddowes (1990) examined two kindergarten classes on their reading achievement tests and the overall atmosphere of the classroom related to interest and motivation of the children. The results of Stanford Early School Achievement Test (SESAT) showed no difference between the groups; however, Eddowes (1990) reported that children in the holistic group interacted more socially and were more interested in language related activities. It is to be noted that both Freeman and Freeman (1987) and Eddowes' (1990) studies did not make a specific distinction between whole language and language experience approach. In fact, in their studies, the two terms were used interchangeably.

Holland and Hall (1989) conducted a comparative study analyzing the effects of whole language approaches and basal on the reading achievement of first grade students. The data showed that there was no statistically significant difference in reading achievement between students taught using a whole language approach and students taught using a basal approach. However, when the data from the observed differences in motivation and enjoyment are combined, the study strongly suggests that the whole language approach is a viable alternative to the basal approach to teaching reading in the first grade.

Schafer (1989) studied the differences in reading achievement of students receiving whole language and basal instruction. Subjects were 37 second graders; 20 students were taught using whole

language and 17 students were taught using basals. The pre- and posttest results indicated no significant differences in reading achievement between the two groups. However, Schafer pointed out that a larger sample from a variety of schools instead of such a small sample from the same school may have yielded different results. To investigate the effectiveness of whole language instruction in 6 first-grade classrooms, three receiving whole language instruction, and the others receiving traditional skill instruction, Klesius et al. (1991) found no significant differences between the two programs.

Stahl and Miller (1989) reviewed forty-six studies which compared the effectiveness of the whole language/language experience approaches to the basal reader approaches on beginning reading. By using vote counting in this meta-analysis, Stahl and Miller reported that overall whole language/language experience approaches and basal reader approaches are approximately equal in effects. Among the total of 180 studies, 22% favored whole language, 12% favored basals, and 66% were found to be nonsignificant. However, they suggested that whole language may be a more effective instruction approach for kindergarten children than the first grade. Their suggestion was supported by Anderson, Hiebert, Scott, Wilkinson, and Adams (cited in Shaw, 1991) who believe that activities such as language experience charts and big books should be used to teach children how to read prior to formal instruction.

A contrast is represented in Reutzel and Cooter's (1990) study on first grade reading achievement. They compared two whole language classrooms and two basal classrooms on a standardized reading achievement measure. The findings revealed a significant experimental effect favoring whole language approaches in both vocabulary and comprehension. The results are different from Stahl and Miller's (1989) and support the belief that the use of the whole language approach in first-grade classrooms has a stronger effect on students' traditional reading achievement tests as compared with basal reader programs.

Shaw (1991), in a review of selected quantitative research on the effectiveness of whole language, cites studies conducted by Ribowsky (1985), Stahl and Miller (1989), and many others. The results of Shaw's studies indicate that "the whole language approach may be more effective at different stages of reading development and/or with different groups of children" (p. 14). She tentatively indicates that the use of a whole language instruction in beginning reading may be more effective for some children while others may need a more systematic approach (Shaw, 1991, p. 15). The inclusion of a systematic phonics instruction is supported by Anderson et al. (1985), Bader, Veatch, and Eldredge (1987), Stahl and Miller (1989), and Adams (1990). She concluded with an excerpt cited from Bond and Dykstra.

. . . Reading programs are not equally effective in all situations. Evidently, other factors than method within a particular learning situation, influence pupil success in reading. . . . To improve reading instruction, it is necessary to train better teachers of reading rather

than to expect a panacea in the form of materials. . . . Children learn to read by a variety of materials and methods. . . . No one approach is so distinctly better in all situations and respects than the others that it should be considered the one best method and the one to be used exclusively (Shaw, 1991, p. 16).

The statement cited above is reflected in Bright's (1989) study. On the basis of extensive observation, Bright conducted an ethnographic study of a grade four classroom during language arts instruction to determine the extent to which traditional and whole language instruction are compatible in an actual classroom. Data were collected through classroom observation which yielded approximately twenty-four hours over a four month period. The findings indicate the possibility of co-existence between these two approaches. That is, language arts programs are not necessarily influenced by only one theoretical approach but by a combination of several.

Based on the results of recent studies which suggest that whole language alone may not be as effective as basals in helping students master the word recognition skills, Eldredge (1991) compared the basal program with a modified whole language approach focusing more on word recognition skills in six first grade classrooms. A daily fifteen-minute period of total phonics instruction was added to the modified program to differentiate from regular whole language classroom. Posttest results showed that students in the modified program achieved greater gains in phonics, vocabulary, reading comprehension, and total reading achievement than students in the basal program. Also, students' attitudes toward reading were

significantly better in the modified whole language program than in the basal program.

To determine the effectiveness of whole language, Milligan and Berg (1992) studied eight first grade classrooms in a middle income suburban school district. Whole language instruction was provided to the four experimental classrooms while traditional basal series was used in the other four control groups. All of the subjects were administered individually a Close Deletion Test (CDT) to measure the comprehension abilities of males and females at three ability levels. The results indicated that middle and low achieving experimental subjects and experimental males attained significantly higher mean scores on the CDT than did their counterparts on the control group.

The preceding review of studies on the effects of whole language implies that no one approach to teaching reading is distinctly better in all situations and respects than the others. Thus, educators disagree on the most effective approach to teaching reading (Holland & Hall, 1989). However, given the concern over children's poor reading performance, educators are continuously urged to seek alternative and successful methods to teaching reading.

Whole Language and ESL Children

Issues regarding language acquisition and development in second language acquisition and first language learning are complex

and uncertain. Goodman Y. (1980) explains language development as the following:

Language development is natural whether written or oral. It develops in a social setting because of the human need to communicate and interact with significant others in the culture. It develops in response to the creative, active participation of the individual trying to understand and make sense out of the world in which he or she is growing (p.4).

Rigg and Enright (1986) claim that children who are developing English are not "language disabled" or "limited" in any way. Rather, they bring to school a rich heritage of cultural and linguistic background (p.1). They believe that ESL children are benefited most when the holistic nature of language is recognized and taught as a whole.

After years of study, Cummins (1981) found that most second language learners develop sufficient BICS skills within two to three years, but they require from five to seven years to acquire CALP . A study conducted by Collier (1989) has reinforced Cummins's findings. Even second language students with strong academic backgrounds in their first language took from four to eight years to acquire the language necessary to score well on standardized tests in schools. Based on this point, it is not difficult to find out why dropouts and school failure are frequently reported among second language learners. They have already experienced frustration in school before they develop the academic language to succeed academically.

The concern over second language learners' educational failure is clear and urgent since the numbers of these students coming to school from varied cultural backgrounds and using languages other than English have increased dramatically in the last decade (Johnson & Roen, 1989; Hudelson, 1984; Rupp, 1986). Olsen (1991) reports that 5 percent of all students k-12 in the United States were classified as Limited or Non-English Proficient (LEP or NEP) during the 1989-1990 school year. In some states, the numbers of language minority students are even higher. The second language learner is no longer a rarity. To improve and extend language minority students' potential to succeed educationally, Freeman and Freeman (1992) point out that whole language is the answer.

Freeman and Freeman (1992) define whole language as a way to extend the potential for educational success for the second language learners. 1) Learning takes place from whole to part; 2) learning should be child-centered because students construct knowledge themselves; 3) learning is meaningful and purposeful, so students will learn both English and the academic content; 4) learning is a social activity; students are encouraged to interact with peers and adults; 5) just as with the first language, second language learners acquire oral and written language simultaneously; 6) learning should take place in the first language to build concepts and accelerate the acquisition of English; 7) learning potential is expended through faith in the learner.

Rice (1989) points out that social aspects are important in language learning. Language development does not occur in a vacuum; other people play an important role. After reviewing current issues in child language acquisition, Rice suggests that the role of the teacher in language facilitation is to socially interact with children in a conversational manner about objects and events which focuses on their needs and interests. Teachers should speak to children at their comprehension levels; plenty of communication opportunities should be provided in the context of meaningful activities.

Cummins also emphasizes the importance of context in developing language proficiency. According to Cummins (1981), language that is context-embedded is less cognitively demanding than language that is context-reduced. Cummins refers context-embedded communication as typical of face-to-face interactions where the communication is supported by an appropriate situation, a context in which to understand the communication while context-reduced communication are situations where there are very few contexture aids in interpreting the communication. Second language teachers know that one way to embed language in context is to provide authentic learning experience for their students. They believe that the more contextual support through the use of materials and actions in the classroom, the less students have to rely solely on their new language.

Rigg (1991) maintains that language use is always in a social context, and this applies to both oral and written language as well as first and second language use. Other second language educators also believe that working with others in a social activity is a crucial element in acquiring a language (Hudelson, 1989; Rigg & Allen, 1989a; Rigg & Hudelson, 1986). Similarly, research has shown the importance of social interaction (Wong Fillmore & Valadez, 1986). All these elements that support and reinforce second language learning are reflected in the whole language classrooms in which both second language learners and those who are learning English are constantly talking and negotiating with peers and adults. They learn as they engage in authentic social interaction within context-rich language activities.

According to Rupp (1986), there are parallels between the whole language approach and the teaching of English as a second language (ESL), where the four aspects of language arts are taught and integrated as a whole. In Rupp's view, both in whole language and ESL classrooms, teachers play important roles to facilitate and model language learning, and create a positive and risk-free environment where children are encouraged and invited to contribute their unique cultural backgrounds and personal experiences to participate actively in the learning process. Rupp (1986) indicates that, in second language acquisition, both Krashen and Terrell (1983) have focused on the same thing as whole language advocates do. It is on comprehension and acquiring language within a context (p. 5). The similarities between whole

language and ESL indicated by Rupp include: 1) both look at language learning as developmental, 2) both start where the children are, and 3) children in the ESL room are active participants in their learning, just as students in a whole language classroom (p. 6).

Heald-Taylor (1986) indicates that the whole language approach is based on current research in language acquisition (Krashen, 1977; Holdaway, 1979; Goodman Y., 1980; Terrell, 1985). Based on her view of how children learn and acquire language, Heald-Taylor (1986) believes that the whole language approach benefits the ESL learners because: 1) youngsters can involve in all language activities regardless of their degree of proficiency in English language; 2) learning strategies are child-centered, helping youngsters to continuously experience and use language to think; 3) development in reading, writing, speaking, and listening are integrated and grow simultaneously; 4) students acquire the target language by being engaged in the learning process; and 5) the whole language approach facilitates growth in both first and second languages. Heald-Taylor indicates specific whole language learning strategies to help ESL students learn English. The key strategies include dictation, literature, process writing, themes, and evaluations.

Likewise, Clark (1992) states that there are five reasons why whole language helps migrant children: 1) it enhances self-esteem of the learner; they see themselves as "doers" in the learning process; 2) it is effective with highly mobile students; worthwhile learning

experiences link students' homes and school together; 3) it is successful with students whose primary language is other than English; 4) reluctant readers and writers experience success and growth in language skills; and 5) it is congruent with other language arts and content area curriculum (p. 4).

Milk (1985) also believes that effective ESL teaching provides situations for students where they can interact meaningfully in the target language. Also, the focus should be on the communicative message rather than on the syntactical form. Likewise, Lamb (1990) reinforces that the whole language method of teaching language acquisition is based on the "message" philosophy (p. 4). Lamb (1990), Hayward (1988), and Hillerich (1990) all believe that whole language is based on the premise that children acquire a language by using it, writing it, thinking it, and reading it. Lamb concludes that whole language and ESL instruction are based on the same basic principles that are meaning-based, oriented to natural situations, and based on the prior experiences of the students. Lamb (1990) argues that through the use of whole language techniques, an ESL teacher can incorporate holistic language situations into the ESL classroom and advance the student's acquisition of a second language. The whole language techniques illustrated by Lamb include spontaneous conversation, semantic mappings, dialogue journals, and writing folders. Lamb states that by including the whole language system in the ESL classroom, a teacher can teach all four language skills, thereby maximizing instructional time and

exposing students to a larger amount of language in many different forms.

Similarly, Rigg (1991) argues that, since most traditional ESL programs offer the four language modes separately, whole language, using all four modes simultaneously in functional contexts, may provide ESL students opportunity to interact with the target language. Further, The California English Language Arts Framework (1987) indicates the need for a different curriculum for ESL students:

One of the greatest challenges to English-language arts programs in California today is extending the crucial language skills of listening, speaking, reading and writing to the increasing numbers of students in the schools for whom English is a second language. . . . Limited English-proficient students need a rich linguistic environment in which the use of repetitive skill-based worksheets and exercises is limited, and frequent opportunities are provided for students to speak, listen, read, and write in meaningful contexts (p. 22).

Whole Language and Second Language Learning

According to Rigg (1991), the history of whole language research with second language learners is similar to holistic research with first language learners. Y. Goodman (1980) may be the first person to investigate the print awareness of preschool preliterate children including both native English speakers and non- or limited English-speaking children. She found that even children who were virtually non-speakers of English could read English print in the environment. Likewise, Hudelson (1984), by using repeated interviews and observations to examine ESL children's reading

development in English, found: 1) that even children with virtually little or no English read environmental print in English; 2) that ESL children can write English for various purposes early in their development of English; and 3) that the experiential and cultural background of ESL children has a strong influence on their reading comprehension. The findings of this study imply that, to produce proficient users of English, teachers should: 1) encourage ESL children to interact with the environment; 2) use their background knowledge and living environment for literacy experiences; 3) create meaningful contexts where children can respond; and 4) recognize that mistakes are necessary and play an important role in children's development and acquisition of a second language.

Rupp (1986) reports that the whole language approach has been successfully incorporated into a number of ESL activities in an elementary school ESL program. These activities include: daily morning messages that serve as a vehicle for reacting, discussion, and other group activities; squiggle writing, in which students are given written squiggles from which they develop a picture and story; and the use of resource materials for students to work on individual or group projects. Rupp found that students in these schools are making progress and have benefited from the different activities. He concluded that the whole language strategies have proven successful and are appropriate for different instructional situations.

Moore (1990) conducted a case study that details an immigrant boy's experience of learning English under the whole language approach. The teacher, after using an individualized

discourse technique and autobiographical writing tasks to teach him English found marked progress in the child's English knowledge. Moore's study reinforces the importance of using individualized, whole-language approaches when educating bilingual learners.

Flemming (1990) spent three weeks observing the teaching and learning of non-English background children in primary schools in New Zealand. From these observations, he suggests that the key factors influencing the development of literacy in LEP (Limited English Proficiency) children are teacher expectation of students' achievement in reading, a rich, whole language environment, and a nurturing classroom climate. This study implies that these principles are transferable to other schools in the United States.

The above studies reveal that all elements that support and reinforce second language learning are reflected in the whole language classrooms in which both second language learners and those who are learning English are constantly talking and negotiating with peers and adults. They learn as they engage in authentic social interaction within context-rich language activities.

BIBLIOGRAPHY

- Adams, M. J. (1990). Beginning to read: Thinking and learning about print (a summary). Champaign, IL: Reading Research and Education Center, University of Illinois.
- Altwerger, B., Edelsky, C., & Flores, B. M. (1987). Whole language: what's new? The Reading Teacher, 41(2), 144-154.
- Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). Becoming a nation of readers. Champaign, IL: Center for the Study of Reading and the National Academy of Education.
- Bader, L. A., Veatch, J., & Eldredge, J. L. (1987). Trade books or basal readers? Reading Improvement, 24, 62-67.
- Bergeron, B. S. (1990). What does the term whole language mean? Constructing a definition from the literature. Journal of Reading Behavior, 22(4), 301-329.
- Bright, R. (1989). Teacher as researcher: Traditional and whole language approaches. Canadian Journal of English Language Arts, 12(3), 48-55.
- Chomsky, C. (1969). The Acquisition of Syntax from 5 to 10. Cambridge, MA: MIT Press.
- Clarke, M. A. (1987). Don't blame the system: Constraints on "whole language" reform. Language Arts, 64(4), 384-396.
- Clark, J. M. (1992). Whole language literacy for at-risk learners. State University of New York, Oneonta. Coll. at Oneonta. Eastern Stream Center on Resources and Training. (ERIC Document Reproduction Service No. ED 347 025)

- Collier, V. (1989). How long? A synthesis of research on academic achievement in a second language. TESOL Quarterly, 23, 509-531.
- Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In Schooling and language minority students: A theoretical framework, 3-49. Los Angeles, CA: Evaluation, Dissemination and Assessment Center California State University, Los Angeles.
- Eddowes, E. A. (1990). Teaching reading in kindergarten: Two contrasting approaches. Reading Improvement, 27(3), 220-223.
- Edelsky, C., Altwerger, B., & Flores, B. (1991). Whole language: What's the difference? Portsmouth, NH: Heinemann.
- Ekwall, E., & Shanker, J. (1989). Teaching reading in the elementary school. Columbus, OH: Chas E. Merrill Publication.
- Eldredge, L. (1991). An experiment with a modified whole language approach in first grade classroom. Reading Research and Instruction, 30(3), 21-38.
- Ferguson, P. (1988). Whole language: A global approach to learning. Instructor, 97(9), 25-27.
- Flemming, D. N. (1990). Literacy for learners of limited English proficiency: The New Zealand approach. TESL Talk, 20(1), 208-212.
- Freeman, R. H., & Freeman, G. G. (1987). Reading Acquisition: A comparison of four approaches to reading instruction. Reading Psychology, 8, 257-272.
- Freeman, Y. S., & Freeman, D. E. (1992). Whole Language for Second Language Learners. Portsmouth, NH: Heinemann.

- Gentry, J. R. (1987). From traditional to whole language teaching. Teaching K-8, 17, 42-44.
- Goodman, K. (1967). Reading: A psycholinguistic guessing game. Journal of the Reading Specialist, 6, 126-35.
- (1986). What's whole in whole language? Portsmouth, NH: Heinemann.
- (1988). Do teachers have to suffer to become whole language teachers? Unpublished manuscript, University of Arizona, Tucson.
- (1989). Whole language research: foundations and development. The Elementary School Journal, 90(2), 207-221.
- Goodman, K., & Goodman, Y. (1981). A whole-language, comprehension-centered reading program. Occasional paper #1, Program in Language and Literacy, University of Arizona. (ERIC Document Reproduction service No. 210 630)
- Goodman, Y. (1980). A model of beginning reading: The roots of literacy. Arizona Center for Research and Development, University of Arizona.
- (1989). Roots of the whole language movement. The Elementary School Journal, 90(2), 113-127.
- Gurskey, D. (1991). After the reign of Dick and Jane. Teacher Magazine, 2(9), 22-29.
- Gunderson, L., & Shapiro, J. (1987). Some findings on whole language instruction. Reading-Canada-Lecture, 5(1), 22-26.
- Hajek, E. (1984). Whole language: Sensible answers to the old problems. Momentum, 15, 39-40.

- Härste, J. C., & Burke, C. L. (1977). A new hypothesis for reading teacher research: Both the teaching and learning of reading are theoretically based. In P. D. Pearson (Ed.), Reading: Research, theory, and practice (pp. 32-40). New York: Mason Publishing Co.
- Hayward, R. (1988). Inside the whole language classroom. Instructor, 27, 34-40.
- Heald-Taylor, G. (1986). Whole language strategies for ESL students. Language and literacy series. (ERIC Document Reproduction Service No. ED 280 287)
- Heald-Taylor, G. (1989). The Administrator's guide to whole language. New York: Richard C. Owen Publishers.
- Hillerich, R. L. (1990). Whole language: Whole truth. Teaching K-8, 20(5), 23-27.
- Hodges, C. A. (1988). Assessing early literacy. (ERIC Document Reproduction Service No. ED 305 130)
- Holdaway, D. (1979). Foundations of literacy. Exeter, NH: Heinemann Educational Books.
- Holland, K. W., & Hall, L. E. (1989). Reading achievement in the first grade classroom: A comparison of basal and whole language approaches. Reading Improvement, 26(4), 323-329.
- Hudelson, S. (1984). Kan Yu Ret an Rayt en Ingles: Children become literate in English as a second language. TESOL Quarterly, 18(2), 221-238.
- Hudelson, S. (1989a). A tale of two children: Individual differences in ESL children's writing. In D. M. Johnson & D. H. Roen (Eds.), Richness in writing: Empowering ESL students (pp. 84-99). NY: Longman.

- Hudelson, S. (1989b). Write on: Children writing in ESL. (ERIC Document Reproduction Service No. ED 309 653)
- Johnson, D. M., & Roen, D. H. (Eds.). (1989). Richness in writing: Empowering ESL students. NY: Longman.
- Kasten, W. C., & Clarke, B. K. (1989). Reading /writing readiness for preschool and kindergarten children: A whole language approach. (ERIC Document Reproduction Service No. ED 312 041).
- Klesius, J. P., Griffith, P. L., & Zielonka, P. (1991). A whole language and traditional instruction comparison: Overall effectiveness and development of the alphabetic principle. Reading Research and Instruction, 30(2), 47-61.
- Krashen, S. (1977). The monitor model of adult second language performance. In M. Burt, H. Dulay, & M. Finocchiaro (Eds.), Viewpoints on English as a second language (pp. 152-161). New York: Regents.
- Krashen, S. (1982). Principles and practice in second language acquisition. New York: Pergamon Press.
- (1985a). The input hypothesis: Issues and implications. London: Longman.
- (1985b, April). The power of reading. 19th Annual TESOL Convention. New York.
- (1991, April). The input hypothesis; An update: paper presented at Georgetown University Round Table on Language and linguistics, Washington, D. C.
- Krashen, S. D. & Terrell, T. D. (1983). The Natural Approach. Hayward, CA. The Alemany Press.

- Lamb, H., & Best, D. L. (1990). Language and literacy: The ESL whole language connection. (ERIC Document Reproduction Service No. ED 324 915)
- Machado, J. (1985). Early Childhood Experiences in Language Arts. New York: Delmar Publishers.
- Manning, M., Manning, G., & Long, R. (1991). Effects of a whole language and a skill-oriented program on the literacy development of inner-city primary children. (ERIC Document Reproduction Service No. ED 324 642).
- McKenna, M. C., Robinson, R. D., & Miller, J. W. (1990). Whole language: A research agenda for the nineties. Educational Researcher, 19(8), 3-6.
- Milk, K. (1985). The changing role of ESL in bilingual education. TESOL Quarterly, 19(4), 657-670.
- Milligan, J. L., & Berg, H. (1992). The effect of whole language on the comprehending ability of first grade children. Reading Improvement, 29(3), 146-54.
- Moll, L. C. (1989). Teaching second language students: A Vygotskian perspective. In D. M. Johnson & D. H. Roen (Eds.). Richness in writing: Empowering ESL students (pp. 55-69). NY: Longman.
- Moore, A. (1990). A whole language approach to the teaching of bilingual learners. Occasional paper #15. (ERIC Document Reproduction Service No. ED 332 500)
- Mosenthal, P.B. (1989). The whole language approach: Teachers between a rock and a hard place. The Reading Teacher, 42, 628-629.
- Nelms, V. (1988). Literacy: whole language and writing to read. Speech given at 17th regional mid-west international reading association. Fargo, North Dakota.

- Newman, J. (1985). Whole language: theory in use. Portsmouth, NH: Heinemann.
- Olsen, R., (1991). Results of a K-12 and adult ESL survey--1991. TESOL Matters, 1(5), 4.
- Pearson, P. D., & Spiro, R. J. (1985). Changing the face of reading comprehension. The Reading Teacher, 38, 724-738.
- Piaget, J. (1955). The language and thought of the child. New York: Meridian Books.
- Pryor, E. G. (1990). Whole language rhetoric: Clarifying misconceptions. Ohio Reading Teacher, 25(1), 15-22.
- Reutzel, D. R., & Cooter, R. B. (1990). Whole language: Comparative effects on first-grade reading achievement. Journal of Educational Research, 83(5), 252-258.
- Reutzel, D. R., & Hollingsworth, P. M. (1988). Whole language and the practitioner. Academic Therapy, 23, 405-416.
- Ribowsky, H. (1985). The effects of a code emphasis approach and a whole language approach upon emergent literacy of kindergarten children. (ERIC Document Reproduction Service No. ED 269 720).
- Rice, M. L. (1989). Children's language acquisition. American Psychologist, 44(2), 149-156.
- Rich, S. (1985). Restoring power to teachers: The impact of "whole language". Language Arts, 62, 717-724.
- Rigg, P. (1991). Whole language in TESOL. TESOL Quarterly, 25(3), 521-547.
- Rigg, P., & Allen, V. G. (1989). Introduction. In P. Rigg & V. Allan (Eds.). When they don't all speak English: Integrating the ESL

student into the regular classroom (pp. vii-xx). IL: National Council of Teachers of English.

Rigg, P., & Enright, D. S. (1986). Children and ESL: Integrating perspectives. Washington, DC. TESOL.

Rigg, P., & Hudelson, S. (1986). One child doesn't speak English. Australian Journal of Reading, 116-125.

Rupp, J. H. (1986). Whole language in the elementary ESL classroom. Paper presented at the Annual Meeting of the Teachers of English to Speakers of Other Languages. (ERIC Document Reproduction Service No. 273 121)

Schafer, V. (1989). The effects of teaching a whole language philosophy to second grade students. Specialist Research Project. Mercer University. (ERIC Document Reproduction Service No. ED 309 400)

Shaw, P. A. (1991). A selected review of research on whole language. Journal of the Wisconsin State Reading Association, 35(1), 3-17.

Slobin, D. (1985). The Cross-Linguistic Study of Language Acquisition, D. Slobin, ed. Hillsdale, N. J.: Erlbaum.

Stahl, S. A., & Miller, P. D. (1989). Whole language and language experience approaches for beginning reading: A Quantitative research synthesis. Review of Educational Research, 59(1), 87-116.

Stice, C. F., & Bertrand, J. P. (1990). Whole language and the emergent literacy of at-risk children: A two-year comparative study. (ERIC Document Reproduction Service No. ED 324 636).

Sulzby, E. & Teale, W. (1985). Writing development in early childhood. Educational Horizons, 64, 8-12.

- Teale, W., Hiebert, E. & Chittenden, E. (1987). Assessing young children's literacy development. The Reading Teacher, 40(8), 772-777.
- Terrell, T. D. (1985). The natural approach to language teaching: An update. The Canadian Modern Language Review, 41(3), 461-479.
- The California English-Language Arts Curriculum Framework and Criteria Committee. (1987). English language arts framework for California public schools kindergarten through grade
- Thompson, R. A. (1992). A critical perspective on whole language. Reading Psychology: An International Quarterly, 13(2), 131-155.
- Tierney, R., Readence, J., & Dishner, E. (1990). Reading strategies and practice, (3rd ed.). Needham Heights, MA: Allyn and Bacon.
- Vygotsky, L. (1962). Thought and language. Cambridge, MA: MIT Press.
- Walmsley, S. A. & Adams, E. L. (1993). Realities of "whole language". Language Arts, 70(4), 272-280.
- Watson, D. J. (1989). Defining and describing whole language. The Elementary School Journal, 90(2), 129-141.
- Weaver, C. (1989). The basalization of America: A cause for concern. In Two reactions to the "Report card on basal readers" (pp. 4-7, 14-22, 31-37). Bloomington, IN: ERIC Clearinghouse on Reading and Communication Skills.
- Whitmore, K. F., & Goodman, Y. M. (1992). Inside the whole language classroom. The School Administrator, 49(5), 20-26.

Whole language: A new approach to teaching and learning. (1991, August). Teacher Magazine, pp. 20-21.

Wong Fillmore, L., & Valadez, C. (1986). Teaching bilingual learners. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd ed., pp. 648-85). New York: Macmillan.